UpStage: An Online Tool for Real-Time Storytelling

Helen Varley Jamieson and Vicki Smith

Abstract

UpStage is an online platform for real-time interactive performances. In this article two of the originators of the project outline its history and discuss selected works created in the platform. Examples from performances illustrate how UpStage has been used as a collaborative storytelling tool, including two specific examples of the use of UpStage in educational contexts. Techniques for devising and sharing real-time online stories are discussed, and the notion of an 'intermedial audience' proposed, recognising the new relationship between remote performers and the online audience. In conclusion the authors introduce a new direction in the development of the software, and suggest that live online storytelling has a vital role to play in enabling geographically dispersed communities and the collective ownership of digital tools and spaces.

Introduction

The term 'interactive storytelling' encompasses a broad range of styles, techniques and approaches to storytelling in the digital age, and a growing range of tools is available to artists working in this field. This article looks at one particular tool that has been purpose-built for live online performative storytelling (cyberformance[1]). UpStage is an accessible web-based platform that facilitates real-time collaboration between artists and audiences, enabling creative dialogue across geographic, cultural, social, artistic and educational communities of practice without demanding high-end hardware and proprietary systems or the constraint of institutional agendas. UpStage offers an innovative and participatory approach by experimenting with the creative potential of domestically accessible digital communication technologies. The authors, Helen Varley Jamieson and Vicki Smith, are two of the originators of this platform and write from their personal experiences about the evolution of cyberformance as a live art form, the development of UpStage, and techniques for real-time interactive storytelling in the online environment, drawing on examples of UpStage performances and its use within the classroom.

Around the Digital Campfire

UpStage is one site in cyberspace where explorers can gather around the 'digital campfire' to share their own stories and construct new dialogues that imagine the future. Back in the mists of time, the earliest storytellers had little more than words and voice with which to share stories. At some point they began to use gestures, sounds, objects – and with very little assistance they conjured up epic scenes in the imaginations of their listeners. Sometimes less is more: the imagination has always been technicolour and three-dimensional, capable of generating all the special effects a story might need and utterly customisable to individual preferences. The compelling concept of oral storytelling stays with us today in many forms – children's bedtime stories, holiday-makers sharing tales round the campfire, spinning a yarn over a beer at the pub, stand-up comedy and so on. And now we have a tempting array of new technologies with which to augment our stories – special effects, quadraphonic sound, digital animations – and new environments in which to situate these stories – virtual worlds, computer games and social media platforms. Today, when people say 'interactive storytelling' they are most often talking about computer games or entertainment where the reader (or player) takes on a role within a story to solve a problem or puzzle, or creates their own narrative from a series of options. Interactive narrative development, intelligent agents and the creation of believable characters and immersive environments are all areas where significant research and development has been invested over the last several decades.

Contemporary 'interactive storytelling' can trace its roots back to the emergence of role-playing games in the IRC (internet relay chat) channels and text-based chat

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[1] Cyberformance describes "live theatrical performances in which remote participants are enabled to work together in real-time through the medium of the internet, employing technologies such as chat applications or purpose-built, multi-user, real-time collaborative software" http://en.wikipedia.org/wiki/Cyberformance

rooms of the late 1980s (Danet 2001, 15-16). This has evolved into the highly sophisticated computer games, online role-playing games and immersive environments available today. Another form that branched out from the same source in the early 1990s was the live staging of theatre texts in online chat environments – the first documented being *Hamnet*, an 80-line version of *Hamlet*, by the Hamnet Players in 1993 (Danet 1995). The same group followed this up with *PCBeth* in 1994. When graphical chat applications appeared, this concept was expanded into these new spaces by Desktop Theatre, who presented *waitingforgodot.com* at the 1997 Digital Storytelling Conference (Rosenberg 1997). These and other performances signalled a new variant on digital storytelling, bringing improvisational and participatory street theatre techniques into publicly accessible online spaces. Often these early cyberformance works used recognisable theatre texts, providing audiences with a familiar framework from which to read the work. Other artists, such as ParkBench (Nina Sobell and Emily Hartzell) and Motherboard (Amanda Steggel) began to experiment with the use of webcams and online video conferencing. Around the same time the term 'digital campfire' began to be used as a metaphor for computer-assisted storytelling, notably by storyteller Dana Atchley (Beddoe-Stephens 1999; McLellan 2007).

As the end of the century drew near, many artists and researchers turned their focus to the high-end technology of digital theatre including 3D scenography, intelligent agents as actors and motion-sensor interactions. Such technologies were less compatible with live online events, except within universities or other institutions with access to high-speed networks. For independent artists, the internet remained a playground for lo-tech experimentation; lack of bandwidth and other resources was an environmental feature, not a limitation. It was in this context that we began our experimentations in cyberformance – online theatrical performance where the performers are geographically distributed and audiences can be anywhere in the world. Our performative research project, *the[abc]experiment*[2] (2001)*,* explored the intersection of theatre and the internet over domestically-accessible networks, and from this project we formed the globally dispersed cyberformance troupe Avatar Body *Collision* along with Karla Ptacek and Leena Saarinen.[3] At first working with free online chat applications such as iVisit and the Palace, Avatar Body *Collision* soon felt the need for a purpose-built platform and conceived of the idea for UpStage – web-based, collaborative, open source, accessible and artist-led lo-tech wizardry. The first version was launched in January 2004; as well as becoming Avatar Body *Collision's* primary rehearsal and performance venue, UpStage was immediately employed within the school environment in the *World X* project (discussed later in this article). Today it is used by artists and students around the world and a large body of work has been created, largely in the context of the UpStage festival, held annually since 2007.

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[2] See http://www.avatarbodycollision.org/abc/

[3] Avatar Body Collision, www.avatarbodycollision.org, was formed in 2002 by Vicki Smith, Leena Saarinen, Karla Ptacek and Helen Varley Jamieson.

A Cyberformance Platform

Having worked with the Palace and iVisit and investigated other platforms such as Active Worlds and Habbo Hotel (this was before the existence of applications such as Second Life and Skype), we were aware of their limitations. For example, platforms developed primarily for chat and social networking were naturally concerned with authentic identity, which is very restrictive for the cyberformance artist who wishes to appear as multiple characters. Furthermore, at this time such applications tended to be closed-source proprietary developments, so while they may have been free to download and use, they were not free to be adapted and developed in ways beyond their initial, social, concept. As artists, we wanted to do things that the software hadn't been designed to do, and we found ourselves becoming frustrated in our creative goals; we dreamt of a purpose-built application for cyberformance that could combine our favourite features from existing applications into a single platform. When the Smash Palace[4] funding opportunity through the New Zealand government emerged in 2003, we were able to develop the first version of UpStage.
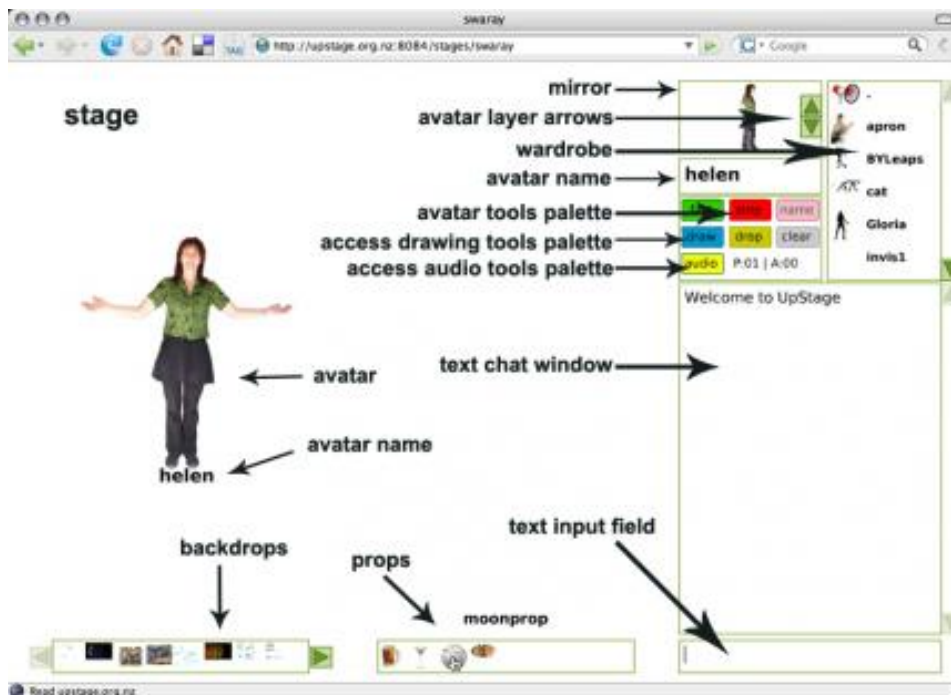

Figure 1. The UpStage player interface, showing on-stage tools and media.

UpStage allows artists to create real-time performance events in collaboration with online audiences. Originally developed by artist/programmer Douglas Bagnall and Avatar Body *Collision*, UpStage is today maintained and developed by computing students at the Auckland University of Technology and an international community of volunteer open source programmers and artists. The tools that UpStage 'players' have at their disposal to compile performances include graphical avatars, props and

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[4] See http://www.creativenz.govt.nz/en/news/smash-palace-fund-supports-arts-science-collaborations

backdrops (which are pre-loaded and can include animations), pre-recorded audio clips, real-time drawing, and live webcam image feeds. Avatars are graphical objects that players can 'hold' and move about the 'stage', rather like a live(ly) comic book. They can also 'speak – their words are spoken by a text2speech programme and appear in speech bubbles by the avatar, as well as in the text chat window. A drawing tool can be used for real-time illustration or to add coloured overlays or 'curtains', highlighting or hiding areas of the screen. Pre-recorded music, sound-effects and voices can be played and mixed in real-time, and webcam images are presented as motion jpeg – a series of still images from a live feed.[5]

UpStage is a server-side application, with all of the elements and interaction taking place within the artist or audience member's web browser. This avoids the need for players or audience to install additional software,[6] making the environment highly accessible. For artists, it is as portable as a username – they can log in from any internet connected computer. Audience members do not log in, but simply click on a link in an email or web page to enter a 'stage'.
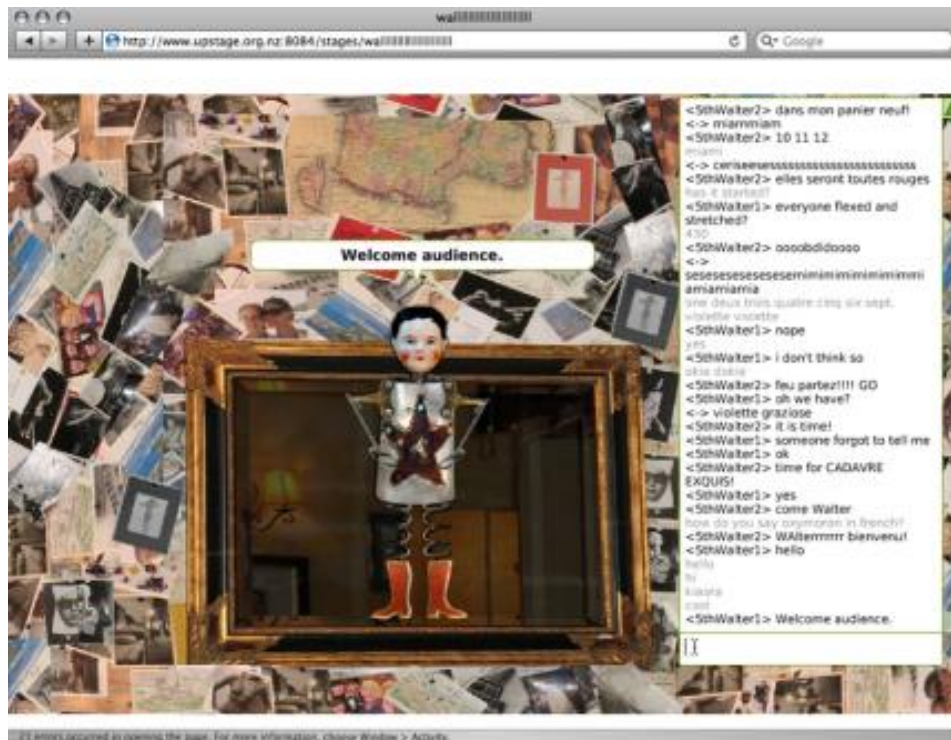

Figure 2. 4th Wall (2009) by Tara Rebele, Miljana Peric & Suzon Fuks, showing the audience view of the UpStage interface and the mix of player and audience text in the chat window.

The text chat window serves as a deceptively simple shared space for player and audience dialogue. The audience can respond and comment anonymously,

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[5] Full audio-visual streaming is being investigated for the next version of UpStage, as until recently technical and bandwidth considerations meant it was not worthwhile implementing and not prioritised.

[6] The server application is available to download from https://sourceforge.net/projects/upstage/ for anyone who has access to a web server and wishes to establish their own UpStage site.

embellishing the performance and frequently talking amongst themselves as well; even new audience members to easily contribute to the dialogue at the same time as allowing whatever textual expression the audience's imagination produces. Audience input is distinguished from that of the avatars by being slightly smaller in size, light grey and silent. This means that avatar text (input by players and spoken by a text2speech synthesiser) is prioritised visually and audibly over audience text, but the audience text is clearly there and is often integral to the progress of the narrative. In a performance with a particularly vocal audience, the speed at which the text chat moves up the screen adds to the lively atmosphere. Normally, there is inter-audience banter which generates a strong sense of temporary online community between the globally dispersed audience members. Experienced UpStage audience members may become more active and visible within the text chat – for example adding their name or an identifier to their text, giving advice to newcomers and contributing at a more sophisticated level to the performance, be it embellishing a narrative, creating visual poetry, jamming in response to the players' texts or providing a humorous or subversive commentary. Unlike most other real-time platforms, UpStage audience members cannot be silenced or ejected from the space but are empowered to construct community and story at will.

Other platforms similar to UpStage have been developed, such as Visitors Studio,[7] (which has a less narrative, more cinematic approach) and webcam platforms such as Panoplie[8] and Selfworld[9]. Each one has a slightly different approach, but the common aim is a means by which artists can create and present real-time performances for and with online audiences. This emphasis on real-time interaction harks back to the campfire concept and the powerful connection generated through sharing space, time and story.

Performances may be narrative or conceptual, with greater or lesser degrees of audience involvement, incorporating other technologies and addressing any themes (often current global issues are discussed). The diverse and growing body of work created in UpStage has been largely fostered through its festival, held annually since 2007[10]. The 101010 UpStage Festival (2010) featured 17 performances by more than 50 artists from around the world, and as well as online audiences there were gathered audiences at 13 'real life access nodes', physical venues located in ten countries. The 101010 artists ranged from 12-year-old school children to established digital artists, and artists from other disciplines experimenting for the first time with digital performance technologies. Some UpStage artists have now presented work at each festival for four years, and their familiarity with the tool is evident. Performances such as *Aquifer Fountain*[11]*, S/Zports: A Training for the Possible*

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[7] Visitors Studio, www.visitorsstudio.org, developed by Furtherfield and Neil Jenkins.
[8] Panoplie, http://panoplie.emakimono.org/, developed by Annie Abrahams, Elisabeth Klimoff & Clément Charmet; no longer available.
[9] Selfworld, www.selfworld.net/
[10] More information about UpStage Festivals including documentation is available online at http://upstage.org.nz/blog/?page_id=1958
[11] Aquifer Fountain (2010) by ActiveLayers.

Wor(l)ds[12] and *Mass-Mess*[13] from the 101010 festival demonstrate – in quite different ways – a high level of sophistication in the creation and presentation of cyberformance in UpStage. *Aquifer Fountain* created a visually rich and meditative space within which the audience poetically embellished the narrative; one audience member asked, "How can you see tears or hear crying in a waterfall?" and a little later someone wrote, "a wave of emotion, a constant sense of falling, crashing and flowing away, losing". *S/Zports: A Training for the Possible Wor(l)ds* built a different energy, speaking directly to the audience to engage them in an "ambitious training programme" and layering a driving musical soundtrack, multiple languages and occasional barrages of theory. This layering of media was also employed by *Mass-Mess*, building to an apocalyptical crescendo where everything literally went down the digital plughole. UpStage festival programmes have always included artists at every level of development and highly experimental work, and there is normally a high level of exchange and support between the artists during the development of work for the festival; this contributes to a strong sense of community and cumulative knowledge amongst UpStage artists.

The Intermedial Audience

Cyberformance maintains a deliberate distinction between the artist/storyteller and the audience/listener (Blau 1990; Bennett 1997), however the relationship is very different to traditional situations where a passive audience sits in a darkened auditorium to experience a performance, or stands before a finished art work in a gallery long after the artist has left. In cyberformance, artist and audience are co-present in a dialogic relationship, and while the audience has less agency than the players, they are far from passive. UpStage audiences (also known as 'chatters') are evolving new codes of behaviour for the environment, making choices about how anonymous to be and how they want to interact with a performance (as discussed above in the description of the text chat tool). The simple fact of being in front of a keyboard, along with the increasing ubiquity of the internet and general confidence in online interaction, means that online audiences expect to be able to assert (or insert) themselves as active participants in a cyberformance. UpStage is also used in situations where there is a proximal audience (gathered in a physical space), further expanding the notion of the intermediality.

The idea of the convergence of artist and audience has been explored in many forms since (and before) Prampolini's 1915 proposition of an "actor-gas" that would replace actors and "fill the audience with joy or terror, and the audience will perhaps become an actor itself as well" (Causey 2006, 87). Through the Fluxus Happenings of the 1960s, and various forms of psychodrama and improvised theatre such as Playback, we have come to concepts such as "user-generated content" and "produsage" (Bruns 2008) in social media platforms such as YouTube and Facebook that promote the idea that everyone can and should be a creative producer. Particularly in digital and online media, the distinction between artist and audience has all but disappeared.

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[12] S/Zports: A Training for the Possible Wor(l)ds (2010) by Miljana Peric, Julijana Protic, Jelena Milosavljevic-Rubil, Goran Rubil, Andrea Aß and Suzon Fuks.
[13] MASS-MESS (2010) by Katarina DJ. Urosevic and Jelena Lalic.

Cyberformance is slightly different, however, in that it maintains a degree of distinction between artists and audience at the same time as empowering and involving the audience; this is one sense in which the cyberformance audience can be said to be intermedial – it is situated in a liminal space outside of traditional codes and yet not entirely within the new (and fluid) boundaries. Intermedial is described by Chappel and Kattenbelt as "a space where the boundaries soften – and we are in-between and within a mixing of spaces, media and realities", and intermediality is "a process of transformation of thoughts and processes where something different is formed" (Chapple and Kattenbelt 2006, 12). This concept of intermediality is highly applicable to live online performance, as a transformative process situated in the liminal space of the internet and employing multiple media. The cyberformance audience is also intermedial in both its situation and its materiality: the temporary community formed between individual members, and each individual's presence in the performance, is achieved with keystrokes, telecommunications technology, electronic writing and a haptic sense of connection through active engagement in the work.

Figure 3. Audience view of *Belonging* (2007) by Avatar Body *Collision*, showing the remediation of audience text chat through a webcam avatar.

Some UpStage performances have inserted the intermedial audience into the visual scene through the remediation of the text chat. In *Belonging* (2007)[14] one of the performers stood in a large projection of the text chat and used a live webcam feed to re-present the collaged image. Audience members later commented that seeing their own words in the webcam image was a powerful reinforcement of the 'live' nature of the event. In performances such as *make-shift* (2010)[15] and *Strings Attached II* (2011)[16] audience text has been copied and spoken aloud within the performance

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[14] Belonging (2007) by Avatar Body Collision.

[15] Make-shift (2010) by Paula Crutchlow and Helen Varley Jamieson.

[16] Strings Attached II (2010) by Cindi L'Abbe and collaborators.

by the avatars. *Strings Attached II* explicitly asked the audience for their words, while *make-shift* initially confused some audience members who asked how the character repeating their words knew what they were saying, and wondered whether the character was in fact a scripted programme. Cleverly reversing this, in *Plaice or Sole* (2010)[17] the performers 'appeared' in the text chat as anonymous audience members, further troubling player/audience boundaries and subverting the potential for the audience to use the chat for risqué or even offensive conversation.

Direct conversation with the audience is a common feature of UpStage performances: *Rejection: freeze, fight or flight* (2007),[18] *Fisk is Norwegian for Fish* (2009),[19] *West Side's Story* (2010)[20] and other shows have posed questions to the audience, inviting responses and procuring material that is then used in the performance. When the audience is not directly addressed, their input can range from quietly listening and observing to providing a running commentary or embellished narrative, and there can also be tangential discussions between audience members inspired by the content of the performance or arising from technical issues. Different performances of the same show can have hugely different audience input and the text logs saved after each performance make for interesting and often hilarious reading.

UpStage has been used in a number of situations involving proximal audiences. For example in *Familiar Features* (2006),[21] the role of the audience extended beyond that of interactive participation; audience members in a gallery space with some of the performers could interact with the online audience and performers via computers, and also appeared online via a web cam. Thus the proximal audience became mediatised and all audiences (and players) experienced the confluence of the simultaneous stories. *make-shift* (2010) experiments further with the potential for dialogue across and between audiences and spaces, situating the audience in two separate houses and online. The three spaces are united through an online interface that combines UpStage with audiovisual streams. Audiences perform for each other through the streams and converse in the text chat, directly contributing to the materials and action of the performance. Like theatre, cyberformance is incomplete without the audience, and in UpStage the intermedial audience contributes its unique voice via the text chat to generate a shared sense of those gathered and the collective "holding of breath" that completes the work.

Real-time Techniques for Interactive Storytelling

Even in complex digital environments, interactivity is often limited to a series of set choices within a finite toolset or database of possibilities. Performing in real-time interactive environments alters some of those limitations – for example, players can choose to deviate from a script if the audience proposes an alternate route, or

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[17] Plaice or Sole (2010) by Francesco Buonaiuto, Mario Ferrigno and Simona Cipollaro.

[18] Rejection: freeze, fight or flight (2007) by Suzon Fuks and James Cunningham.

[19] Fisk is Norwegian for Fish (2009) by Kjelsas 12.

[20] West Side's Story (2010) by Ellen, Joanne and Hannah.

[21] Familiar Features (2006) http://www.avatarbodycollision.org/familiarfeatures/index.html

performances can be structured to respond to whatever input the audience gives, similar to improvised theatre forms such as Playback or Forum Theatre. Of course, these models are not without their own limitations. For example, in UpStage adding additional media to a stage requires reloading the stage for everyone currently on that stage, which is not normally desirable to do during a performance (although it has been done for deliberate effect, such as in *Merznet*[22]); therefore, if the audience suggests a dinosaur and the players do not have a dinosaur graphic, such as an avatar or a prop, already on the stage, creative solutions must be found to add one. A dinosaur can be drawn with the drawing tool; held up to a webcam; or performed by an avatar changing its name and inviting the audience to imagine it as a dinosaur. The low-tech wizardry of UpStage creates open spaces where imagination can flourish, and the lack of a dinosaur ceases to be a limitation: your dinosaur may be a fierce Tyrannosaurus Rex while mine is a graceful soaring Pteradactyl and someone else's is a pink fluffy toy, in a collective suspension of disbelief.

UpStage artists often collaborate remotely and use UpStage as their primary shared workspace; this means that meetings, improvising, devising and performing also become a form of training in the use of the software. The more time one spends in the environment, the more familiar one is with its operation, with the physical gestures and movements involved in using the software and with the sensitivity, positioning, tone of voice and other subtleties. Regular open sessions are held, to introduce newcomers to the environment and as opportunities for artists to jam together; these playful sessions spark connections between participants, with newcomers readily engaging with more experienced 'UpStagers'. The open ethos invites everyone to participate in lively co-construction of story, contributing spontaneously from their own experiences and ideas – sharing, borrowing and transforming in a collective experience that is also a form of cyberformance training and that may provide the basis for a performance. This is a practical exploration of the idea of stories as collaborative experience (Benjamin 1959; Zipes 2005), where the technology facilitates both a repository for experiences and the creative state of "inter-being" (Kristeva 2001, 15) which then enables the transformation of material into story, and player into storyteller.

The structures of UpStage performances are usually progressive but not always strictly narrative, and frequently juxtapose multiple and diverse stories and characters within a single performance to enable a dense intertextuality. For example, three performances from the 101010 festival did this in different ways: *Theatre of Exchange*[23] evoked archetypes from dreams and mythology; *Sprinkler Fountain*[24] combined an Indonesian legend with scientific facts about water usage globally; and the contemporary cultural politics of Germany and Aotearoa/New Zealand, tourism and art, were spliced together in *Die Totezone*.[25] This layering of diverse material and media creates a degree of Brechtian "verfremdungseffekt"

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[22] Merznet (2008) by Ben Unterman, Daniel Silverman, Maya Jarvis and Inouk Touzin.

[23] Theatre of Exchange (2010) by Nathalie Fougeras and Malin Ståhl.

[24] Sprinkler Fountain (2010) by Suzon Fuks, Miljana Peric, Marischka Kinkhamer and Tara Rebele.

[25] Die Totezone (2010) by Cat Ruka and Alexa Wilson.

(Bennett 1997)[26] at the same time as allowing multiple entry points and readings of the performance. Some audiences more comfortable with traditional story structures may find this confusing, but experimentation is vital for the development of emerging forms such as cyberformance and interactive storytelling. Generally, UpStage audiences appreciate this and value the opportunity to participate in the evolution of a new form – 'assisting' the performance, to borrow from the French, who do not 'watch' a performance, rather 'j'assiste' (Blau 1990, 262).

Examples of performances employing more overtly narrative structures include *Murder 2.0,*[27] *West Side's Story* and *Snow White and the Seven Chihuahuas*.[28] These performances have adapted familiar structures and stories for the online environment, devising specific ways for audiences to interact. A film noir interactive comic, *Murder 2.0* used Flash and ActionScript in UpStage to give the audience clickable clues leading to multiple paths through the story. Although the audience were watching simultaneously and commenting together in the chat in real-time, they were not all seeing and hearing the same version of events. *West Side's Story* was a classic whodunit created by a group of school pupils; the audience were invited to co-interrogate suspects in a quest to solve a murder together. In *Snow White and the Seven Chihuahuas* the audience were asked multi-choice questions at turning points in the narrative to create a new variation on an old story. This real-time interaction within familiar structures fosters the sense of connection and 'inter-being' between remote performers and audience.
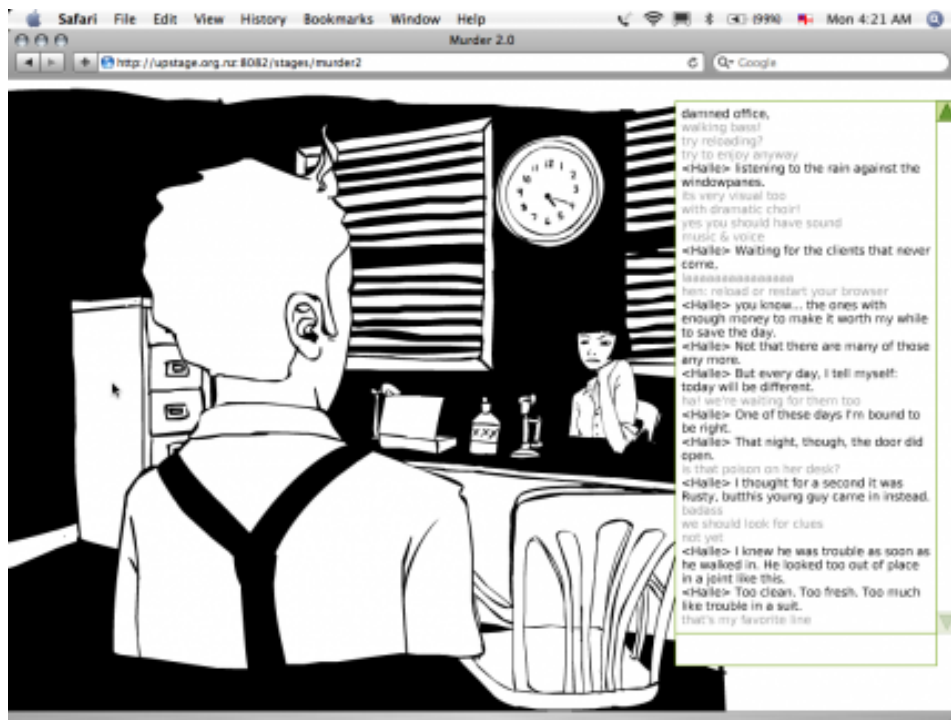

Figure 4. Audience view of *Murder 2.0*.

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[26] See also Helen Varley Jamieson's thesis http://creative-catalyst.com/thesis.html
[27] Murder 2.0 (2010) by Virtual Theatre.
[28] Snow White and the Seven Chihuahuas (2009) by Kristen Carlson and Sheila Page.

The centrality of text – within the UpStage environment as well as within storytelling – means that all performances have poetic potential, whether they be tightly scripted (such as Avatar Body *Collision's* successful rendition of Beckett's short stage play *Come and Go*[29] and the cyberformance staging of a poem, *User Profile*[30]) or improvised (such as *Strings Attached II* and *Rejection: freeze, flight or fight*). As well as the text appearing in the chat window and the speech balloons of avatars on the stage, invisible avatars can be used to 'float' words around the screen in a form of dynamic visual poetry. Some performances (such as *Noxiterra*[31] and *The Best Air Guitar Album in the World Vol. II*[32]) use comparatively little player text, instead offering visual provocations that inspire textual improvisation by the audience; this plays with the balance of focus between the text chat window and the stage area where the visual elements of the performance are presented. *Plaice or Sole* further disrupted this split focus by faking a technical problem on the stage and then situating most of the performance within the text chat window, where the player text became indistinguishable from 'real' audience text.

Real-time audience interaction in UpStage is currently via textual input, in the main, however planned enhancements to the software aim to expand the possibilities and those with programming skills are already experimenting in this area. In 2007, before it was possible to play pre-recorded audio files in UpStage, *The Best Air Guitar Album in the World Vol. II* used animated Flash avatars that the audience could click on to trigger audio tracks. Two years later, *Lines*[33] used Actionscript to enable the audience to draw lines directly onto the stage which were then multiplied and animated by the players to generate a unique rotating mandala for each audience member. The same group were responsible for *Murder 2.0* in 2010, with clickable clues resulting in divergent plot-lines. UpStage has also been used in combination with other online platforms including blogs, streaming media interfaces, collaborative writing tools and websites to generate material and create a context outside of the moment of the performance, as well as within the performance itself, providing an additional dimension and tools that are not yet available within the UpStage interface (for example *Calling Home,*[34] *make-shift, A Little Online Communion*[35] and *4th Wall*).

UpStage in Educational Contexts

When used in educational contexts, UpStage offers the exciting possibility of direct creative interaction between students across cultures and/or geographies. In the first year of its release UpStage became an integral technology within W*orld X*, an educational project facilitated by Vicki Smith and Karla Ptacek. *World X* connected a group of school students from a rural community on the West Coast of Aotearoa/New Zealand with teenagers in a central London in an extra-curricular programme

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[29] Come and Go (2007) by Samuel Beckett, performed in UpStage by Avatar Body Collision.
[30] User Profile (2009) by Meliors Simms.
[31] Noxiterra (2008) by Antoinette LaFarge and Marlena Corcoran.
[32] The Best Air Guitar Album in the World Vol. II (2007) by Anaesthesia Associates.
[33] Lines (2009) by Ben Unterman & Daniel Silverman.
[34] Calling Home (2008) by ActiveLayers.
[35] A Little Online Communion (2010) by Sheila Bishop, Josh Cajinarobleto & Mitzi Mize.

exploring race and identity. The participants explored their local context and imagined a future world through asynchronous communication in the virtual learning environment Interact,[36] and by performing family herstory, popular local recipes and alternative endings to current blockbuster films in UpStage. The process of sharing and co-creating story was encouraged and interfered with by HeRMiTT, a cantankerous cyberbeing who dwelt within UpStage – "… always in the matrix, an omnipresent intelligence, anarcho cyber terrorist acting as a virus of the new world disorder"[37] (Plant 1998, 59). Its unpredictable interactions with the students and the ambiguity about what or who HeRMiTT was[38] gave the two remote groups the parameters within which their imagined world could develop in cyberspace. Collectively, the students envisaged a world where their common interests as teenagers were contextualised by vastly different environmental realities, and where the physical possibilities and limitations of the real space were transposed with substances and actions given effect in the shared virtual space of UpStage.

Following the six months of the project, the students' improved social development in other areas was remarked upon by their teachers. Their concept of the future of education and learning as a ubiquitous process that happens how and when the learner is ready remains visionary within curriculum-driven education environments. The ability of the students to complement the asynchronous work they were doing in Interact with the performances in UpStage gave the project a focal point to work around as well as the playground to act out their collective understanding of how they negotiated the online space. The portability of UpStage meant that for one of the performance events, when the local school network was damaged by an electrical storm, the students could regroup and perform from the local internet cafe.

A new educational project initiated in 2011 by Vicki Smith will use UpStage in conjunction with another open source online environment, Moodle,[39] to explore narrative as a tool for remembering in physical and online performance. *How Haka Tells a Story* aims to engage artists, Māori[40] storytellers, teachers, kapa haka[41] performers and a dispersed group of students with tikanga Māori[42] in their local contexts. This project uses the process of learning physical sequences as a kinesthetic understanding of performing narrative within the creation and performance of haka.[43] The next stage will invite the students to apply that socially constructed knowledge to physical performance in UpStage. The students will work with local iwi (Māori) to be informed and guided in the creation and interpretation of

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[36] Interact is an open source learner management application which includes file sharing, discussion, blogging and chat technologies (http://sourceforge.net/projects/cce-interact/).

[37] Plant's description of the character All New Gen from the proto game Bad Code by VNS Matrix.

[38] In fact, HeRMiTT was a character/avatar, played in real-time alternately by Karla Ptacek and Vicki Smith.

[39] Moodle http://moodle.org/.

[40] Tangata Whenua/Māori are the first nation people of Aotearoa/New Zealand.

[41] Kapa haka is Māori performing arts.

[42] Tikanga Māori is the way of Māori as a people, collective memory and cultural practices.

[43] Haka literally means performance or dance, and has many forms.

their own story and performances. In both environments the lines between learner and teacher are blurred as students help teachers and other students negotiate their virtual classrooms. In closing the circle of narrative through art, story, carving[44] and performance, *How Haka Tells a Story* situates the participants in an 'electric wananga'[45] – an expanded learning space that employs digital technologies to connect students in different physical locations. The intended culmination of the project is that the students deliver an online performance, physically performed from their local marae[46] – a positive response to concerns expressed by theorists such as Wade Davis about the potential threat posed by new technologies to ancient cultures and traditions (Davis 2009).

Conclusion/Future

The sharing of stories and experience is fundamental to the development of community, as expressed in Lambert's description of "story as a map of our existence" (Lambert 2002, 17) and in the concept of the storytelling neighbourhood, where storytelling becomes the process of constructing identity as a neighbourhood (Ball-Rokeach 2001). In online communities, where individuals are commonly geographically disparate as well as separated by cultural and linguistic differences and may have never physically met, storytelling can provide a crucial bridge. This bridge may transport audiences into unfamiliar territories: *Amazigh Storyteller*[47] employed direct storytelling and real-time translation to share the storyteller's experience of desert life and interpretations of ethnic identity, while *x marks the spot*[48] took audiences to the high seas and brought the genre of a ship's log to cyberformance, combining poetic text with strong visual images; "… time, light and the sea imposing their narrative order … and character as yet unformed awaiting the sequence of events to define …" (Raban 1996). In projects such as *How Haka Tells a* Story a bridge is created between past and present. At the meta-level, all of the stories shared in UpStage have together woven a strong and unique community between the many individuals around the world who have participated as artists and audience.

UpStage is one of a number of available platforms for experimenting with live online collaborative storytelling, and it is evolving along with the ideas of both artists and audience. At the same time, cyberformance artists are also experimenting with other tools – both purpose-built and existing real-time environments from SelfWorld to Skype. Increasing accessibility of telecommunications technology, including mobile phones and internet, means that more people are able to engage in participatory real-time storytelling forms and other digital arts practices. The annual UpStage

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[44] Whakairo, carving, is a sculptural form of storytelling.

[45] Wananga means learning space or workshop.

[46] The marae is a shared communal space – technically the open space in front of a wharenui (Māori meeting house) but colloquially used to refer to the whole complex of buildings and open space.

[47] Amazigh Storyteller (2008) by Nadia Oufrid delivered 'en Francais' and concurrently translated into English.

[48] x marks the spot (2010) by Vicki Smith.

festival continues to attract new artists and audiences every year, and its regular open sessions provide hands-on opportunities for newcomers to learn about the environment and get involved.[49] While the user community has steadily grown, development of the software itself has progressed relatively slowly due to dependence on volunteers. During 2011, German post-graduate computing and multimedia design student Martin Eisenbath has completed a thesis that proposes rebuilding the base engine of the system in a way that is more open to input from other developers and therefore more sustainable. A project is now underway to implement Martin's prototype and, if successful, this will provide a new platform for cyberformance, giving UpStage a complete refurbishment and providing tools that others can customise and use in their own performative experiments.

As well as providing an online venue for theatrical storytelling, UpStage offers a model for networked creative communities and online communication that has application beyond the creative sector. UpStage is contributing to the evolution of alternative economies and ecologies that offer sustainable pathways in the contemporary political and financial landscape. As we embark on the first major redevelopment of the UpStage software, we are confident of its continuing artistic and social value.

Storytelling is, at its heart, about communication between people: wherever people gather, stories are shared. As communication technologies open up new spaces for people to gather, stories are exchanged at digital campfires. For the last eight years UpStage has attracted stories, tellers and listeners to its warmth, providing opportunities for us all to develop tools, interact with and influence the evolution of our communities through story. We look to the future with optimism.

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[49] Information about these sessions can be found on the UpStage web site, and interested people can join the mailing list. Those wishing to experiment with UpStage especially open source developers are also always welcome to get involved (see the web site, www.upstage.org.nz, for further information).

References

Ball-Rokeach, S. J., Y. C. Kim, and S. Matei. 2001. "Storytelling Neighborhood: Paths to Belonging in Diverse Urban Environments." *Communication Research* 28(4): 392-428.

Beddoe-Stephens, P. 1999. "Digital Campfire Tales." *Wired Magazine*. Retrieved fromhttp://www.wired.com/culture/lifestyle/news/1999/06/20034

Benjamin, Walter. 1959. *Illuminations*. Translated by H. Zorn. London: Pimlico.

Bennett, Susan. 1997. *Theatre audiences: A theory of production and reception*. 2nd ed. New York: Routledge.

Blau, Herbert. 1990. *The audience*, *Parallax.* Baltimore, Maryland: Johns Hopkins University Press.

Bruns, Axel. 2008. *Blogs, Wikipedia, Second Life, and beyond: From production to produsage*. New York: Peter Lang.

Causey, Matthew. 2006. *Theatre and performance in digital culture: From simulation to embeddedness*. London: Routledge.

Chapple, Freda, and Chiel Kattenbelt. 2006. *Intermediality in theatre and performance*. 2nd ed. Amsterdam: Rodopi.

Danet, Brenda. 1995. "Curtain time 20:00 GMT: Experiments with virtual theater on internet relay chat." *Journal of Computer-mediated Communication* (2). Retrieved fromhttp://jcmc.indiana.edu/vol1/issue2/contents.html.

Danet, Brenda. 2001. *Cyberpl@y*: *Communicating online*. New York: Berg.

Davis, W. 2009. *The Wayfinders: Why ancient wisdom matters in the modern world.* Toronto: Anansi.

Kristeva, J. 2001. *Hannah Arendt: Life is a narrative*. Translated by R. Guberman. New York: Columbia University Press.

Lambert, J. 2002. *Digital Storytelling, Capturing lives, Creating Community.* Berkeley: Digital Diner Press.

McLellan, H. 2007. "Digital storytelling in higher education." *Journal of computing in higher education* 19-20(1): 19-20.

Plant, Sadie. 1998. *Zeroes + ones: Digital women and the new technoculture*. London: Fourth Estate.

Raban, J. 1996. "At Sea." In E. Abbey (Ed.) *The Best of Outside*. New York: Vintage.

Rosenberg, Scott. 1997. "Clicking for Godot." *Salon.com*. Retrieved April 29, 2007, fromhttp://archive.salon.com/21st/feature/1997/10/02godot.html.

Zipes, J. 2005. "To Eat or Be Eaten: The Survival of Traditional Storytelling." *Storytelling, Self, Society* 2(1): 1-20.

List of Figures